

SEQUENCE LISTING

<110> Nakamura, Yusuke
Katagiri, Toyomasa
Nakatsuru, Shuichi

<120> Method of Diagnosing Breast Cancer

<130> 082368-007500US

<140> US 10/573,297
<141> 2006-03-22

<150> US 60/505,571
<151> 2003-09-24

<150> WO PCT/JP04/14438
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qk10f03.x1 NCI_CGAP_Kid3 clone IMAGE:1868573 3',
BRC No. 147 forward primer

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BRC No. 147 reverse primer

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complex 1, sigma 2 subunit (AP1S2), zq66c06.s1 Stratagene
neuroepithelium (#937231) clone IMAGE:6436570 3' BRC No. 398
forward primer

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 homolog (DACH, DACH1), FLJ10138, ym5310.s1 Soares infant
 brain 1NIB clone IMAGE:52021 3' BRC No. 395 forward primer

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 homolog (DACH, DACH1), FLJ10138, ym5310.s1 Soares infant
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 glyceraldehyde-3-phosphate dehydrogenase (GAPD, GAPDH, G3PD),
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      kinase (TOPK), spermatogenesis-related protein kinase (SPK), PDZ
      binding kinase (PBK), Nori-3, FLJ14385, A7870, BRC No. 456
      forward primer, A7870 specific probe

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      binding kinase (PBK), Nori-3, FLJ14385, A7870, BRC No. 456
      reverse primer, A7870 specific probe

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<210> 17
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<220>
<223> synthetic luciferase control (LUC) double-stranded
      oligonucleotide

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| <211> 51 | | |
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| oligonucleotide | | |
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| aaaacgtacg cggaatactt cgatctcttg aatcgaagta ttccgcgtac g | | 51 |
| <210> 19 | | |
| <211> 21 | | |
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| specific primer | | |
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| glyceraldehyde-3-phosphate dehydrogenase (GAPD, GAPDH, G3PD) | | |
| specific primer | | |
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| gccttcatca tccaaacatt | | 20 |
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| <223> synthetic semi-quantitative RT-PCR A7870 specific primer | | |

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| <400> 22 | | |
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| <211> 51 | | |
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| <213> Artificial Sequence | | |
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| oligonucleotide Si1-F | | |
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| oligonucleotide Si1-R | | |
| <400> 24 | | |
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| <213> Artificial Sequence | | |
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| <211> 51 | | |
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| <223> synthetic double stranded A7870-specific siRNA | | |
| oligonucleotide Si3-F | | |
| <400> 26 | | |
| caccctggat gaatcataacc agattcaaga gatctggat gattcatcca g | | 51 |
| <210> 27 | | |
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| oligonucleotide Si3-R | | |
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<210> 28
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<210> 30
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<210> 32
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<220>
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<222> (3)...(10)
<223> u at positions 3-10 may be present or absent

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| <211> 41 | | |
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| <223> exemplary TOPK hairpin siRNA with loop sequence | | |
| <400> 33 | | |
| gaacgauaua aagccagccc ccggcuggcu uuauaucguu c | | 41 |
| <210> 34 | | |
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| <220> | | |
| <223> exemplary TOPK hairpin siRNA with loop sequence | | |
| <400> 34 | | |
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| <210> 35 | | |
| <211> 43 | | |
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| <213> Artificial Sequence | | |
| <220> | | |
| <223> exemplary TOPK hairpin siRNA with loop sequence | | |
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| <223> exemplary TOPK hairpin siRNA with loop sequence | | |
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<210> 38
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<223> exemplary TOPK hairpin siRNA with loop sequence

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 spermatogenesis-related protein kinase (SPK), PDZ
 binding kinase (PBK), Nori-3, FLJ14385, A7870, BRC
 No. 456

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<222> (179)..(1147)
<223> T-LAK cell-originated protein kinase (TOPK)

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cataattta aaagttgtt tgaatatggc aagagggtta aagtatctgc accaagaaaaa 660
gaaactgtttt catggagaca taaagtcttc aatgttgcg attttggcg attttggaaac 720
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ccctgaggct ttttacattt gcacagagcc atggaaaaacc aagaagctg tggagggagaa 840
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<210> 49
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<213> Homo sapiens

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<220>
<223> T-LAK cell-originated protein kinase (TOPK),
spermatogenesis-related protein kinase (SPK), PDZ
binding kinase (PBK), Nori-3, FLJ14385, A7870, BRC
No. 456

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Pro Ile Met Gln Lys Leu Gly Phe Gly Thr Gly Val Asn Val Tyr Leu
  35          40          45
Met Lys Arg Ser Pro Arg Gly Leu Ser His Ser Pro Trp Ala Val Lys
  50          55          60
Lys Ile Asn Pro Ile Cys Asn Asp His Tyr Arg Ser Val Tyr Gln Lys
  65          70          75          80

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Arg Leu Met Asp Glu Ala Lys Ile Leu Lys Ser Leu His His Pro Asn
 85 90 95
 Ile Val Gly Tyr Arg Ala Phe Thr Glu Ala Ser Asp Gly Ser Leu Cys
 100 105 110
 Leu Ala Met Glu Tyr Gly Gly Glu Lys Ser Leu Asn Asp Leu Ile Glu
 115 120 125
 Glu Arg Tyr Lys Ala Ser Gln Asp Pro Phe Pro Ala Ala Ile Ile Leu
 130 135 140
 Lys Val Ala Leu Asn Met Ala Arg Gly Leu Lys Tyr Leu His Gln Glu
 145 150 155 160
 Lys Lys Leu Leu His Gly Asp Ile Lys Ser Ser Asn Val Val Ile Lys
 165 170 175
 Gly Asp Phe Glu Thr Ile Lys Ile Cys Asp Val Gly Val Ser Leu Pro
 180 185 190
 Leu Asp Glu Asn Met Thr Val Thr Asp Pro Glu Ala Cys Tyr Ile Gly
 195 200 205
 Thr Glu Pro Trp Lys Pro Lys Glu Ala Val Glu Glu Asn Gly Val Ile
 210 215 220
 Thr Asp Lys Ala Asp Ile Phe Ala Phe Gly Leu Thr Leu Trp Glu Met
 225 230 235 240
 Met Thr Leu Ser Ile Pro His Ile Asn Leu Ser Asn Asp Asp Asp Asp
 245 250 255
 Glu Asp Lys Thr Phe Asp Glu Ser Asp Phe Asp Asp Glu Ala Tyr Tyr
 260 265 270
 Ala Ala Leu Gly Thr Arg Pro Pro Ile Asn Met Glu Glu Leu Asp Glu
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 305 310 315 320
 Asp Val

<210> 50
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<220>
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 spermatogenesis-related protein kinase (SPK), PDZ
 binding kinase (PBK), Nori-3, FLJ14385, A7870, BRC
 No. 456

<220>
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 <222> (202)..(1170)
 <223> T-LAK cell-originated protein kinase (TOPK)

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 gaggtacttg gccacgactt atttcacct ccgaccttc cttccaggcg gtgagactct 180
 ggactgagag tggcttcac aatggaaaggg atcagtaatt tcaagacacc aagcaaattt 240
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 gctatggaaat atggagggtga aaagtctcta aatgacttaa tagaagaacg atataaagcc 600
 agccaagatc cttttccagc agccataatt ttaaaagttt ctttgaatat ggcaagaggg 660

| | | | | | | |
|-------------|-------------|-------------|------------|-------------|--------------|------|
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| gtatattaaag | gcgattttga | aacaattaaa | atctgtatg | taggagtctc | tctaccactg | 780 |
| gatgaaaata | tgactgtgac | tgaccctgag | gcttgttaca | ttggcacaga | gccatggaaa | 840 |
| cccaaagaag | ctgtggagga | gaatgggttt | attactgaca | aggcagacat | atttgccctt | 900 |
| ggccttactt | tgtgggaaat | gatgacttta | tcgattccac | acattaaatct | ttcaaattgtat | 960 |
| gatgatgatg | aagataaaaac | ttttgatgaa | agtgattttg | atgatgaagc | atactatgca | 1020 |
| gcgttggaa | ctaggccacc | tattaatatg | gaagaactgg | atgaatcata | ccagaaaagta | 1080 |
| attgaactct | tctctgtatg | cactaatgaa | gaccctaaag | atcgcccttc | tgctgcacac | 1140 |
| attgttgaag | ctctggaaac | agatgtctag | tgatcatctc | agctgaagtgt | tggcttcgcgt | 1200 |
| aaataactgt | ttattccaaa | atatttacat | agttactatc | agtagttatt | agactctaaa | 1260 |
| attggcatat | ttgaggacca | tagtttcttg | ttaacatatg | gataactatt | tctaataatgta | 1320 |
| aatatgctt | tattggctat | aagcacttgg | aattgtactg | ggtttctgt | aaagtttttag | 1380 |
| aaactagcta | cataagtact | ttgatactgc | tcatgctgac | ttaaaaacact | agcagataaaa | 1440 |
| cgctgttaaac | tgttaacatta | aattgaatga | ccattacttt | tattaatgat | ctttcttaaa | 1500 |
| tattctatat | tttaatggat | ctactgacat | tagcactttg | tacagtacaa | aataaagtct | 1560 |
| acatttggtt | aaaacactga | acctttgtt | gatgtgttta | tcaaattgata | actggaaagct | 1620 |
| gaggagaata | tgcctcaaaa | agagtagctc | cttggatact | tcagactctg | gttacagatt | 1680 |
| gtcttgcatt | cttggatctc | ctcagatctt | tggttttgc | ttaattttat | taaatgtatt | 1740 |
| ttccataactg | agttttaaaat | ttattaattt | gtaccttaag | catttcccaag | ctgtgtaaaa | 1800 |
| acaataaaac | tcaaattagga | tgataaagaa | taaaggacac | tttgggttacc | agaaaaaaaaa | 1860 |
| aaaaaaaaaa | aaaaaaaaaa | aaaaaaaaaa | aaaaaaaaaa | | | 1899 |

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<211> 322

<212> PRT

<213> *Homo sapiens*

<220>

<223> T-LAK cell-originated protein kinase (TOPK),
spermatogenesis-related protein kinase (SPK), PDZ
binding kinase (PBK), Nori-3, FLJ14385, A7870, BRC
No. 456

<400> 51

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Glu | Gly | Ile | Ser | Asn | Phe | Lys | Thr | Pro | Ser | Lys | Leu | Ser | Glu | Lys |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Lys | Lys | Ser | Val | Leu | Cys | Ser | Thr | Pro | Thr | Ile | Asn | Ile | Pro | Ala | Ser |
| | | | | 20 | | | | | 25 | | | | | 30 | |
| Pro | Phe | Met | Gln | Lys | Leu | Gly | Phe | Gly | Thr | Gly | Val | Asn | Val | Tyr | Leu |
| | | | | | | 35 | | | 40 | | | | | 45 | |
| Met | Lys | Arg | Ser | Pro | Arg | Gly | Leu | Ser | His | Ser | Pro | Trp | Ala | Val | Lys |
| | | | | | | 50 | | | 55 | | | | | 60 | |
| Lys | Ile | Asn | Pro | Ile | Cys | Asn | Asp | His | Tyr | Arg | Ser | Val | Tyr | Gln | Lys |
| | | | | | | 65 | | | 70 | | | | | 75 | |
| Arg | Leu | Met | Asp | Glu | Ala | Lys | Ile | Leu | Lys | Ser | Leu | His | His | Pro | Asn |
| | | | | | | 85 | | | 90 | | | | | 95 | |
| Ile | Val | Gly | Tyr | Arg | Ala | Phe | Thr | Glu | Ala | Asn | Asp | Gly | Ser | Leu | Cys |
| | | | | | | 100 | | | 105 | | | | | 110 | |
| Leu | Ala | Met | Glu | Tyr | Gly | Gly | Glu | Lys | Ser | Leu | Asn | Asp | Leu | Ile | Glu |
| | | | | | | 115 | | | 120 | | | | | 125 | |
| Glu | Arg | Tyr | Lys | Ala | Ser | Gln | Asp | Pro | Phe | Pro | Ala | Ala | Ile | Ile | Leu |
| | | | | | | 130 | | | 135 | | | | | 140 | |
| Lys | Val | Ala | Leu | Asn | Met | Ala | Arg | Gly | Leu | Lys | Tyr | Leu | His | Gln | Glu |
| | | | | | | 145 | | | 150 | | | | | 155 | |
| Lys | Lys | Leu | Leu | His | Gly | Asp | Ile | Lys | Ser | Ser | Asn | Val | Val | Ile | Lys |
| | | | | | | 165 | | | 170 | | | | | 175 | |
| Gly | Asp | Phe | Glu | Thr | Ile | Lys | Ile | Cys | Asp | Val | Gly | Val | Ser | Leu | Pro |
| | | | | | | 180 | | | 185 | | | | | 190 | |
| Leu | Asp | Glu | Asn | Met | Thr | Val | Thr | Asp | Pro | Glu | Ala | Cys | Tyr | Ile | Gly |
| | | | | | | 195 | | | 200 | | | | | 205 | |

Thr Glu Pro Trp Lys Pro Lys Glu Ala Val Glu Glu Asn Gly Val Ile
210 215 220
Thr Asp Lys Ala Asp Ile Phe Ala Phe Gly Leu Thr Leu Trp Glu Met
225 230 235 240
Met Thr Leu Ser Ile Pro His Ile Asn Leu Ser Asn Asp Asp Asp Asp
245 250 255
Glu Asp Lys Thr Phe Asp Glu Ser Asp Phe Asp Asp Glu Ala Tyr Tyr
260 265 270
Ala Ala Leu Gly Thr Arg Pro Pro Ile Asn Met Glu Glu Leu Asp Glu
275 280 285
Ser Tyr Gln Lys Val Ile Glu Leu Phe Ser Val Cys Thr Asn Glu Asp
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Pro Lys Asp Arg Pro Ser Ala Ala His Ile Val Glu Ala Leu Glu Thr
305 310 315 320
Asp Val

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<212> PRT

<213> Artificial Sequence

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<223> endoplasmic reticulum retention sequence

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Lys Asp Glu Leu
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